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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/650,691 | 08/29/2003 | Hsiang-Yu Huang | TOP 317 | 7694 |

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EXAMINER

SHENG, TOM V

ART UNIT PAPER NUMBER

2629

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-----------------------------------------|--|
| Office Action Summary | Application No. 10/650,691 | Applicant(s) HUANG, HSIANG-YU | |
| | Examiner Tom V. Sheng | Art Unit 2677 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claims 1 and 10, it is not clear with regard to "implementing one of the functions ... by the BIOS", lines 14-15 of claim 1, lines 23-25 of claim 10, and "implementing one of the functions ... by the operating system", lines 19-21 of claim 1, lines 30-32 of claim 10. Specifically, it is unclear since both the operating system and the BIOS commonly do not perform any hotkey functions directly and hotkey functions are usually performed by a device driver (software) called by the OS. Please further clarify claims. Claims 2-9 are dependent on claim 1 and claims 11-20 are dependent on claim 10.

As for claim 10, it is not clear as to the meaning of "program codes", line 4. What kind of codes is the applicant referring to other than the usual BIOS code used during boot-up.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (US 2004/0042166, hereinafter APA) and Baik et al. (US 6,529,219 B1, hereafter Baik).

As for claim 1, APA teaches a method for implementing functions of hotkeys in a computer having a BIOS and operating system (fig. 3), the method comprising the steps of:

asserting a system management interrupt signal (fig. 2; output Fn_SMI of keyboard 130 goes active) when a system management interrupt event is detected (when for example keys Fn and F2 are pressed together; page 1 paragraph 7 of APA PGPub);

determining whether the system management interrupt event results from one of the hotkeys being pressed (a signal from Fn_SMI is asserted when only a function key is pressed together with another key, as detected by a logic circuit; page 1 paragraph 7 of APA PGPub);

determining whether the operating system is of a first or second type if the system management interrupt event results from one of the hotkey being pressed (In step 34, if the interrupt event is a hotkey event, the procedure proceeds to step 35. In step 35, the CPU 100 identifies whether the operating system is MS 98/ME or MS

2000/XP; page 1 paragraphs 12 and 13);

reading a status value corresponding to the pressed hotkey (a status identifying a hotkey driver is determined by CPU 100 using ASL code from BIOS and in association with the embedded controller) and implementing one of the functions corresponding to the status value (the hotkey driver implements the hotkey function - as indicated by corresponding scan code; page 1 paragraphs 8-14) by the BIOS (the ASL code is from the BIOS) if the operating system is of the first type (when the OS is determined to be MS 98/ME); and

reading the status value corresponding to the pressed hotkey (a device identified via status value is determined by the embedded controller 1261) and implement the corresponding hotkey function (the device is driven by the embedded controller 1261 and OS; page 1 paragraph 15) if the operating system is of the second type (when the OS is determined to be MS 2000/XP).

Thus, under MS 98/ME, the hotkey function is implemented by a corresponding device driver, and under MS 2000/XP, the hotkey function is implemented by the OS with the embedded controller.

However, APA does not teach implementing hotkey function in MS 2000/XP mode by transferring the status value to the operating system by the BIOS, and implementing one of the functions corresponding to the status value by the operating system.

One of ordinary skill in the art would recognize that to perform as above means the OS of the MS 2000/XP mode needs to be the one driving the device driver instead of the BIOS.

Baik teaches the use of smart buttons that allows a user to directly select and execute an application program in a shell program via the smart/shell buttons (Abstract). In particular, Baik teaches smart button driver 43 is driven by operating system 41, which in turn is driven by BIOS 32, which directly interfaces keyboard controller 31 (that is, not using an embedded controller; fig. 4; column 3 line 59 through column 4 line 5).

Therefore, it would have been obvious to modify APA's connections as Baik such that an embedded controller is removed, since this allows the direct execution of application program with driving device driven by either the OS or the BIOS. Further incorporating the smart buttons allows the use of smart shell programs (column 4 lines 6-47).

As for claim 2, Baik teaches pressing one smart key and one regular key together for initiating a function, which may be an audio player.

As for claim 3, one of Baik's smart keys corresponds to claimed Fn key and Baik's F1-F12 keys correspond to claimed F1-F12 keys.

As for claims 4-7, the MS 98, ME, 2000, and XP operating systems are well known in the art to be used in a computer system including a keyboard.

5. Claims 10-15 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Baik as applied to claims 1-7 above, and further in view of Paolini (US 6,429,793 B1).

Claims 10 and 19 correspond to claims 1 and 2 with the addition of a memory device, BIOS, keyboard having a first and second key, bridge device, and CPU, which directly correspond to APA's memory 104, Flash ROM 124 storing the BIOS, keyboard 130 having Fn and F1-F12 keys, South Bridge 112, and CPU 102 (fig. 1). Moreover, the ASL code of the BIOS corresponds to the program codes of the BIOS in the Flash ROM 124. However, APA does not teach that the ROM 124 also stores status values (corresponding to hotkeys).

Paolini teaches that a ROM that stores the BIOS code and a translation table, which translate a scan code from keyboard controller to an input code recognizable by the CPU (column 1, lines 48-55). One of ordinary skill in the art recognizes the input code corresponds to claimed status values since the input code is recognized by the CPU to correspond to a specific key input.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to allocate memory in ROM 124 for the translation table (and thus the input code) so that hotkey event can be recognized by the CPU.

Claim 11 is rejected per analysis of claim 3.

Claims 12-15 are rejected per analyses of claims 4-7.

As for claim 18, hard disk is a common choice for storing the operating system.

As for claim 20, APA teaches that the CPU loads the ASL code from the BIOS in order to initiate the procedure for the hotkey function (APA PGPub, page 1 paragraphs 7 and 11). Thus, the ASL code reads on claimed program codes.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liu (US 6,243,079 B1) teaches interpretation of function key pressed based on a corresponding indicator state in a status table.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tom Sheng
March 11, 2006

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a large, sweeping flourish at the end.